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09/656,017	09/07/2000	Louis F Aprigliano	82627	2288

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Naval Surface Warfare Center
Carderock Division
9500 MacArthur Boulevard
West Bethesda, MD 20817-5700

EXAMINER

LIN, KUANG Y

ART UNIT	PAPER NUMBER
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1725

27

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Please find below and/or attached an Office communication concerning this application or proceeding.



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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Paper No. 27

Application Number: 09/656,017
Filing Date: September 07, 2000
Appellant(s): APRIGLIANO ET AL.

Jacob Shuster and John Forrest

For Appellant

EXAMINER'S ANSWER

MAILED

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This is in response to the appeal brief filed Nov. 18, 2002.

(1) Real Party in Interest

A statement identifying the real party in interest is contained in the brief.

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(2) *Related Appeals and Interferences*

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

(3) *Status of Claims*

The statement of the status of the claims contained in the brief is correct.

(4) *Status of Amendments After Final*

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) *Summary of Invention*

The summary of invention contained in the brief is correct.

(6) *Issues*

The appellant's statement of the issues in the brief is NOT correct. The changes are as follows: since claims 5, 6 and 9 are finally rejected under 35 USC 103(a) as being unpatentable over Nakamori et al and further in view of either Coombs or Jenkins et al (see paragraph 4 of the final office action, dated July 30, 2002, paper No. 20) or alternatively are rejected under 35 USC 103(a) as being unpatentable over either Coombs or Jenkins et al and further in view of either Nakamori et al or Shaw or JP 63-33,594 (see paragraph 5 of paper No.20), the issue is not whether the claimed invention would have been obvious in view of the teaching of Coombs alone. Rather, the issue is whether the claimed invention would have been obvious in view of all the prior art teachings as a whole.

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(7) Grouping of Claims

The rejection of claims 5, 6, and 9 stand or fall together because appellant's brief does not include a statement that this grouping of claims does not stand or fall together and reasons in support thereof. See 37 CFR 1.192(c)(7).

(8) Claims Appealed

The copy of the appealed claims contained in the Appendix to the brief is correct.

(9) Prior Art of Record

5,843,587	Nakamori et al	12-1988
4,779,802	Coombs	10-1988
4,681,258	Jenkins et al	7-1987
3,635,769	Shaw	1-1972
JP63-33,594	Tokushu Denkyoku	2-1988

(10) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

1. Claims 5, 6 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakamori et al and further in view of either Coombs or Jenkins et al.

Nakamori et al substantially show the invention as claimed except that they use the low pressure plasma spraying technique instead of gas spraying technique for atomizing the alloy during coating process. However, Coombs and Jenkins et al shows that it is conventional to use the gas spray technique for atomizing the alloy. The gas spraying technique of the Coombs and Jenkins et al has an advantage of forming a uniform protective coating on a substrate (see col. 2, lines 25-32 of Coombs and col. 1, lines 6-

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9, col. 3, lines 29-33, col. 4, lines 9-10 of Jenkins et al). In view of the prior art teaching as a whole, to use gas spraying technique for atomizing the alloy with nitrogen as the atomizing gas for the coating the gas turbine of Nakamori et al is deemed to be nothing more than a personal preference since Jenkins et al show that it is conventional to use either a low pressure plasma spraying technique or a gas spraying technique for atomizing and depositing an alloy onto a substrate surface for forming a coating. With respect to the claimed feature of use nitrogen to cover the molten alloy, since both Coombs and Nakamori et al show to use nitrogen gas for atomizing the same, it would have been obvious to also use the nitrogen gas as a cover gas for preventing the molten alloy from oxidizing.

2. Claims 5, 6 and 9 are also rejected under 35 U.S.C. 103(a) as being unpatentable over either Coombs or Jenkins et al and further in view of either Nakamori et al or Shaw or JP 63-33,594.

Each of the primary references shows a gas spraying technique by using nitrogen as atomizing gas for atomizing a molten metal and deposit the same onto a substrate to form a protective layer. The gas spraying technique of the primary references has an advantage of forming a uniform protective coating on a substrate (see col. 2, lines 25-32 of Coombs and col. 1, lines 6-9, col. 3, lines 29-33, col. 4, lines 9-10 of Jenkins et al). Each of the secondary references shows that Ni-Cr alloy displays excellent corrosion resistant property. In view of the prior art teachings as a whole, it would have been obvious to spray the alloy of secondary references in the process of primary references to form a corrosion protective coating on an article which is to be used in a corrosive

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environment. With respect to the claimed feature of using nitrogen to cover the molten alloy, since both Nakamori et al and Coombs show that to use nitrogen gas for atomizing the molten alloy, it would have been obvious to also use nitrogen gas to cover and thus to prevent the molten alloy to be spray from oxidizing.

(11) Response to Argument

1. In page 3 of the brief appellants stated that Coombs does not disclose, teach or suggest any of the limitation of claims 5, 6 and 9. However, since claims 5, 6 and 9 are rejected under 35 USC 103(a) as being unpatentable over Nakamori et al and further in view of either Coombs or Jenkins et al (see paragraph 4 of the final office action, dated July 30, 2002, paper No. 20) or alternatively are rejected under 35 USC 103(a) as being unpatentable over either Coombs or Jenkins et al and further in view of either Nakamori et al or Shaw or JP 63-33,594 (see paragraph 5 of paper No.20), the issue is not whether the claimed invention would have been obvious in view of the teaching of Coombs alone. Rather, the issue is whether the claimed invention would have been obvious in view of all the prior art teachings as a whole.

2. Applicants stated that the prior art references failed to explicitly suggest, teach or motivate selection of a cover gas to increase strength of a ductile corrosion-resisting type alloy being cast onto a surface. However, both Coombs and Nakamori et al show to use nitrogen gas for atomizing the molten metal, it would have been obvious to also use the nitrogen gas as a cover gas for further preventing the molten alloy from oxidizing. By using the technique of Coombs with nitrogen as the cover gas as well as the atomizing gas for atomizing the Ni-Cr alloy of either Nakamori et al, Shaw or JP 63-

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33,594 and depositing the same on a substrate surface, the grain size of the deposited alloy is smaller than that of an as cast Ni-Cr alloy, i.e. the grain size will be the same as that of instant invention since both use the same gas spraying process. As the grain size decreases, both yield strength and ductility of an alloy increased. Thus, the ductility and the strength of the atomized and deposited Ni-Cr alloy will be the same as that of appellants, i.e. will be higher than that of the conventional as cast Ni-Cr alloy which has yield strength lower than 145 ksi and ductility less than 25%.

3. For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

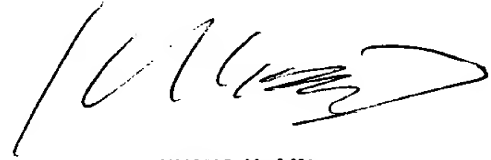
December 20, 2002

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